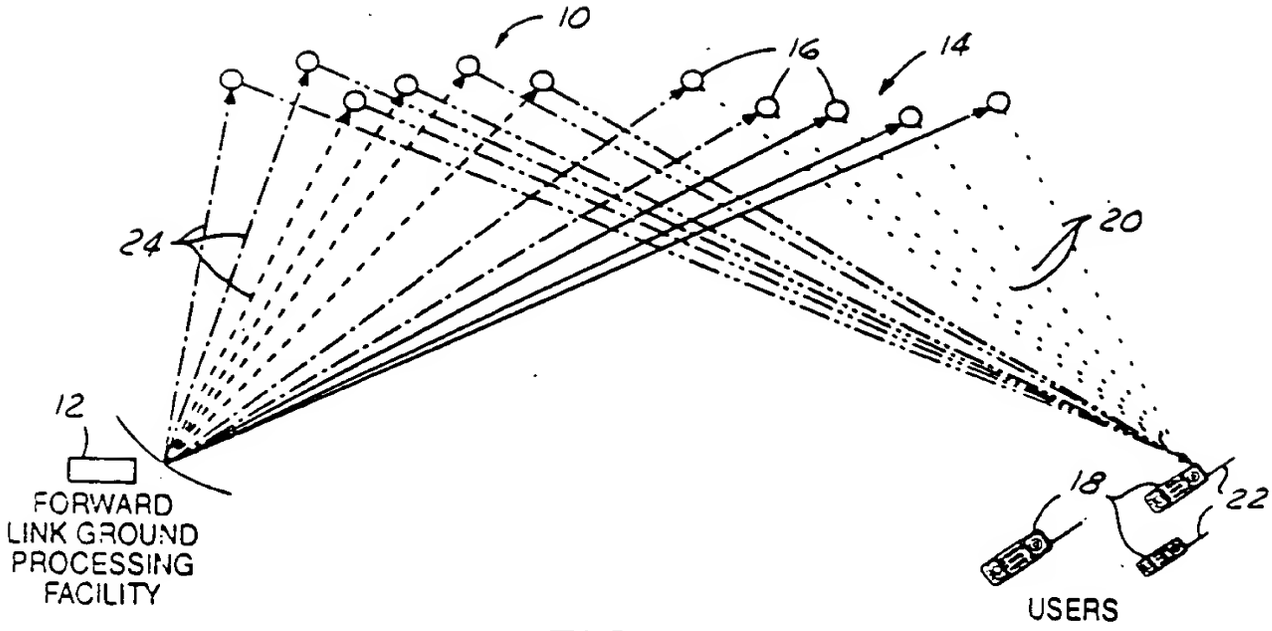

10
16
14
24
20
12
FORWARD
LINK GROUND
PROCESSING
FACILITY
18
22
USERS

FIG. 1

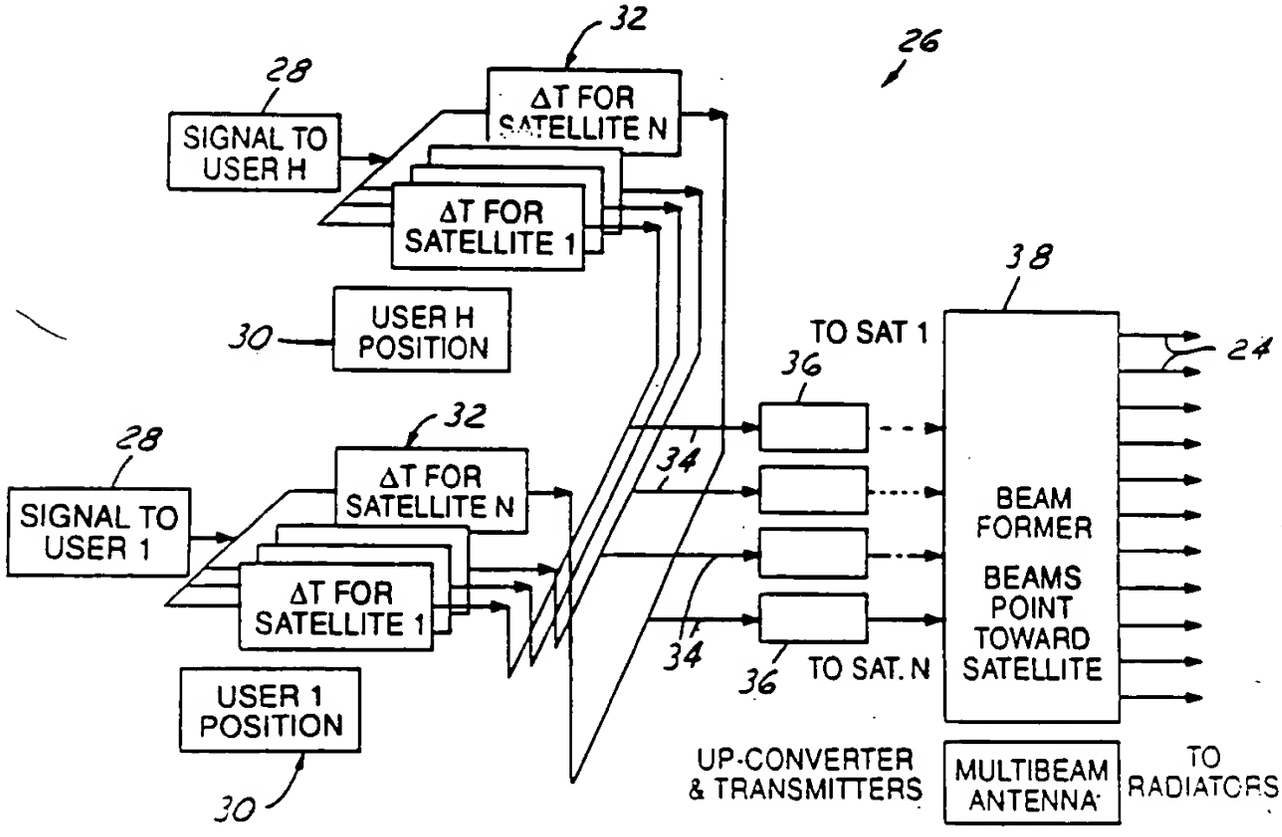

32
26
28
SIGNAL TO
USER H
ΔT FOR
SATELLITE N
ΔT FOR
SATELLITE 1
30
USER H
POSITION
38
TO SAT 1
36
24
28
32
SIGNAL TO
USER 1
ΔT FOR
SATELLITE N
34
BEAM
FORMER
BEAMS
POINT
TOWARD
SATELLITE
ΔT FOR
SATELLITE 1
34
36
TO SAT. N
USER 1
POSITION
30
UP-CONVERTER
& TRANSMITTERS
MULTIBEAM
ANTENNA
TO
RADIATORS

FIG. 2

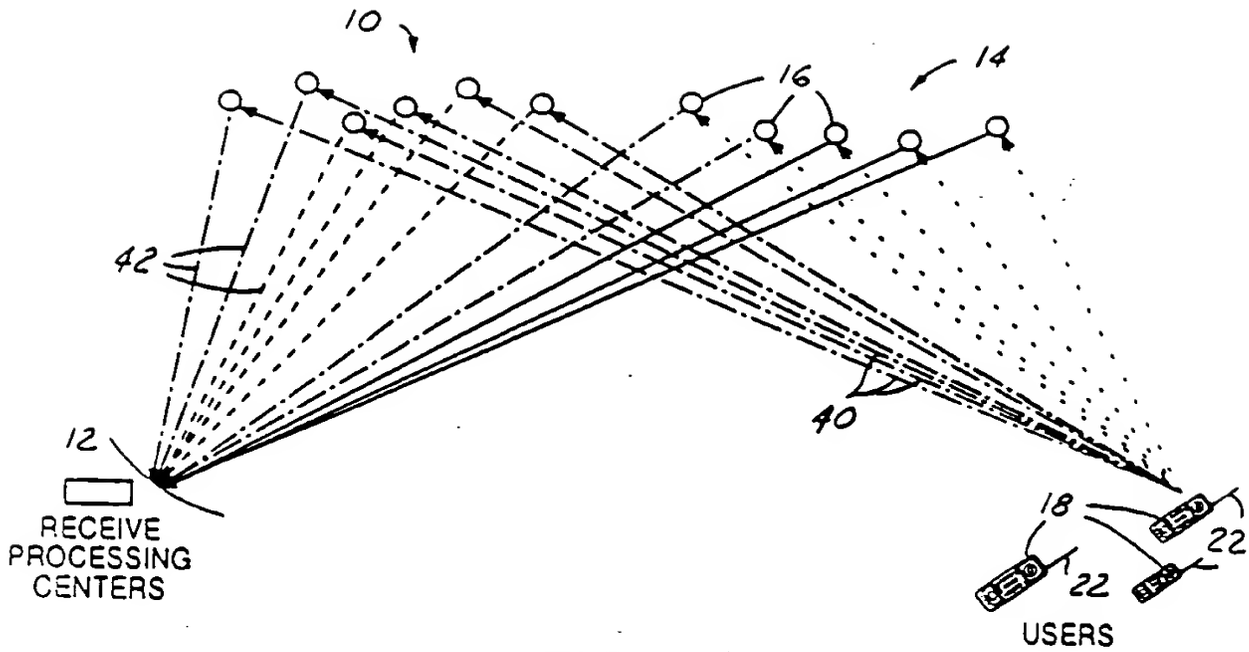

10
14
16
42
40
12
RECEIVE PROCESSING CENTERS
18
22
22
USERS

FIG.3

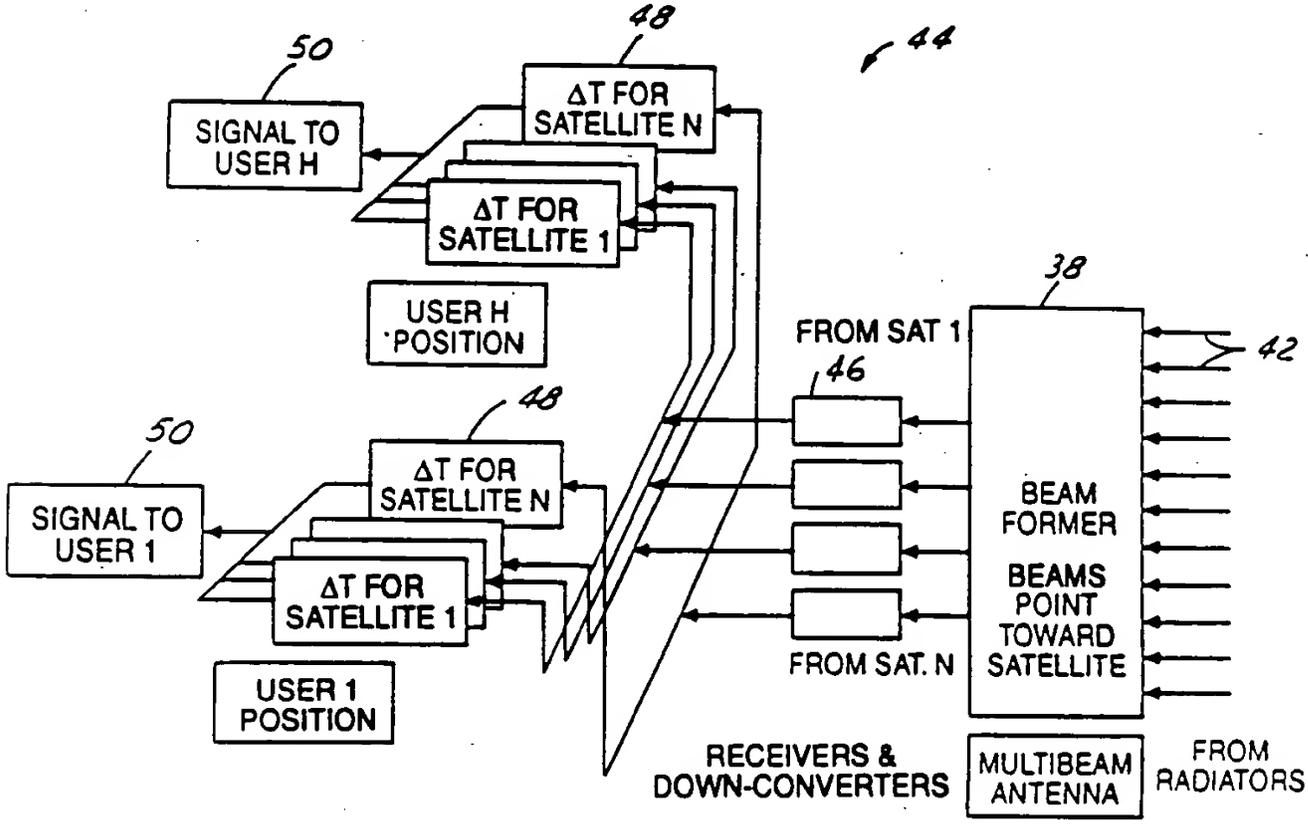

48
44
50
SIGNAL TO USER H
ΔT FOR SATELLITE N
ΔT FOR SATELLITE 1
USER H POSITION
38
FROM SAT 1
46
42
48
50
SIGNAL TO USER 1
ΔT FOR SATELLITE N
ΔT FOR SATELLITE 1
USER 1 POSITION
BEAM FORMER
BEAMS POINT TOWARD SATELLITE
FROM SAT. N
RECEIVERS & DOWN-CONVERTERS
MULTIBEAM ANTENNA
FROM RADIATORS

FIG.4

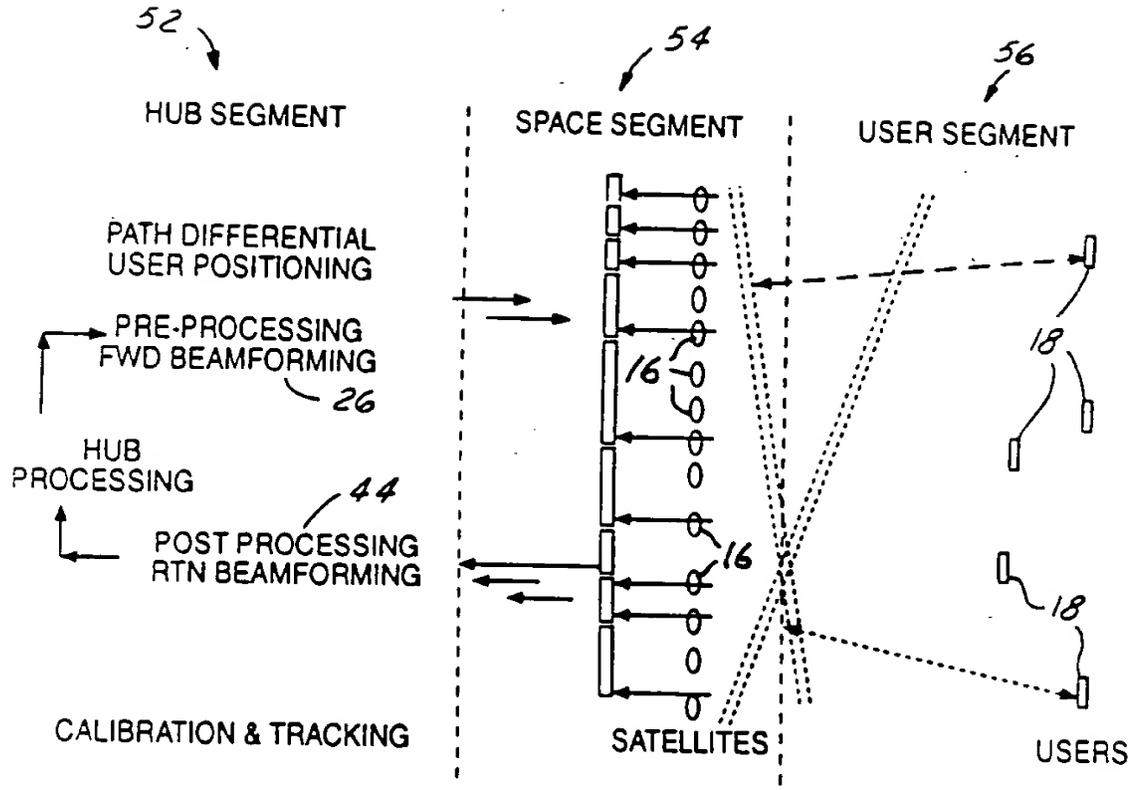

52
HUB SEGMENT
54
SPACE SEGMENT
56
USER SEGMENT
PATH DIFFERENTIAL
USER POSITIONING
PRE-PROCESSING
FWD BEAMFORMING
26
HUB
PROCESSING
44
POST PROCESSING
RTN BEAMFORMING
CALIBRATION & TRACKING
16
16
18
18
SATELLITES
USERS

FIG.5

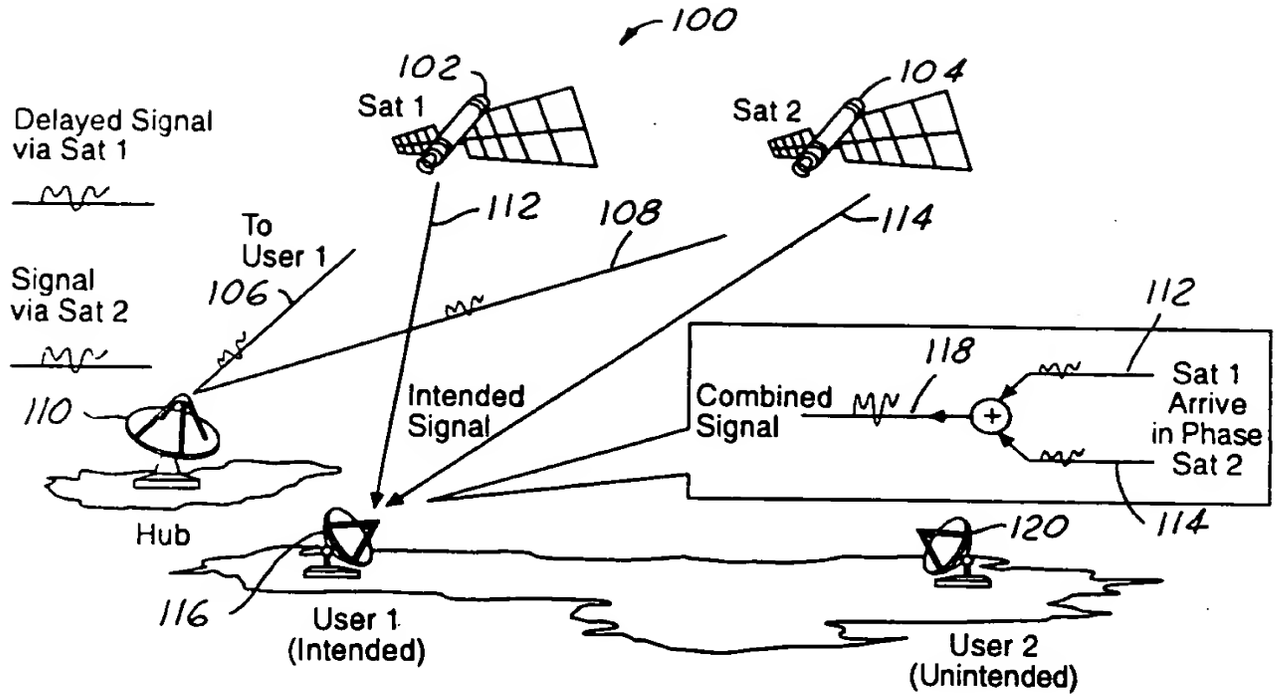

100
102
Sat 1
104
Sat 2
Delayed Signal
via Sat 1
To
User 1
106
112
108
114
Signal
via Sat 2
110
Intended
Signal
112
118
Combined
Signal
Sat 1
Arrive
in Phase
Sat 2
114
Hub
120
116
User 1
(Intended)
User 2
(Unintended)

FIG.6

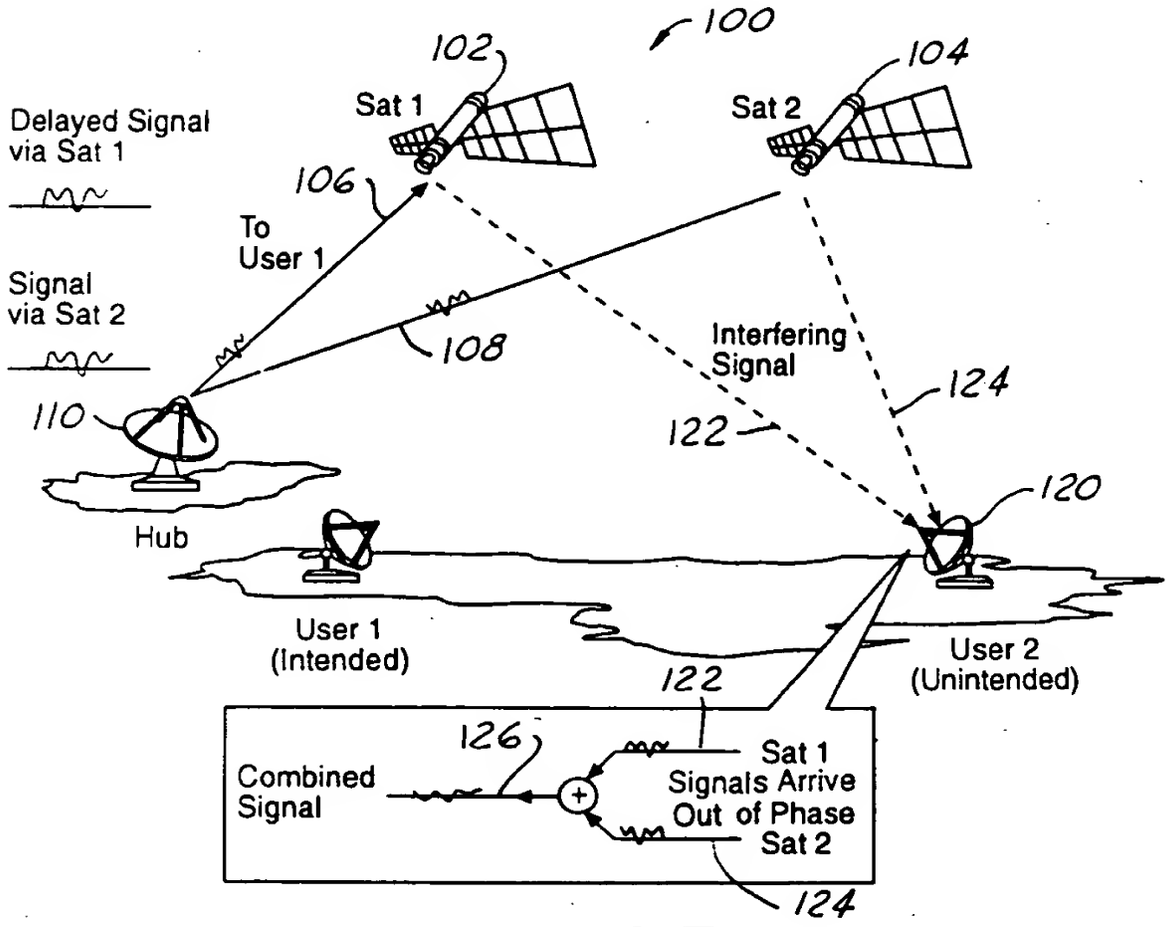
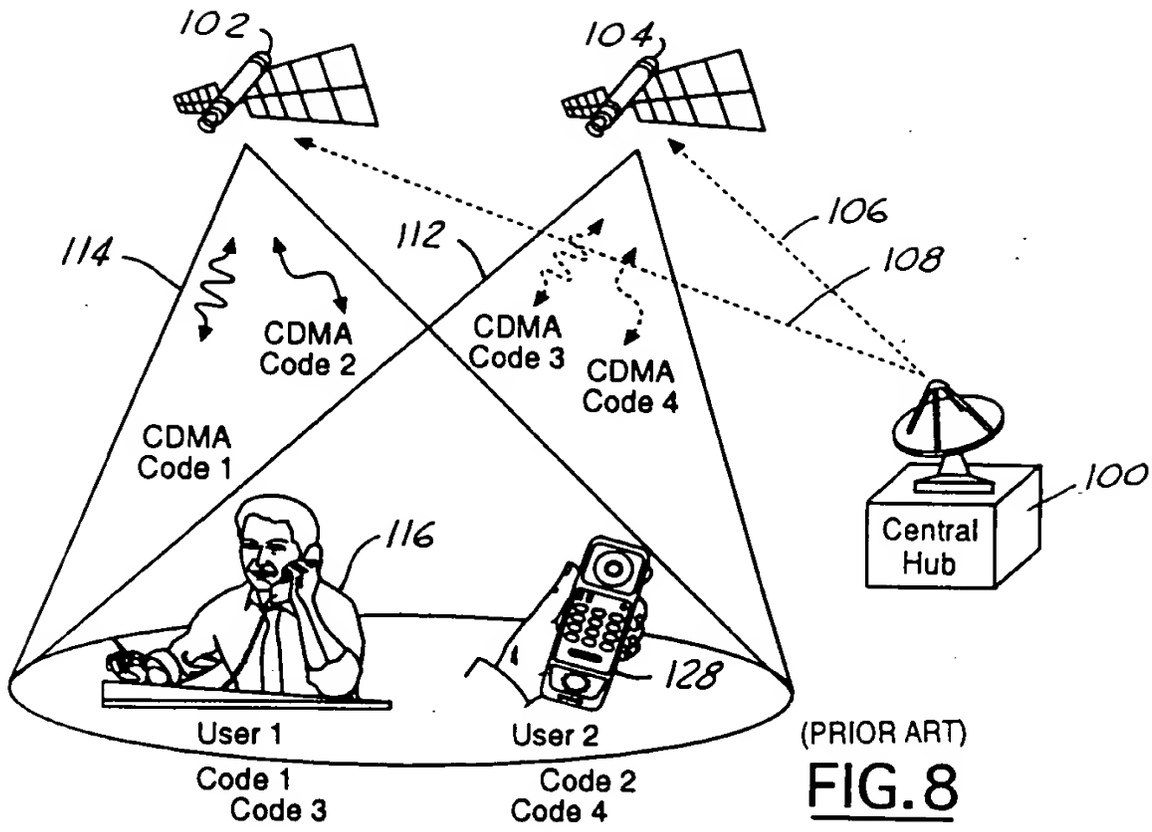

100
102
Sat 1
104
Sat 2
Delayed Signal
via Sat 1
106
To
User 1
Signal
via Sat 2
108
Interfering
Signal
124
122
110
120
Hub
User 1
(Intended)
User 2
(Unintended)
122
126
Combined
Signal
Sat 1
Signals Arrive
Out of Phase
Sat 2
124

FIG.7



(PRIOR ART)

FIG.8

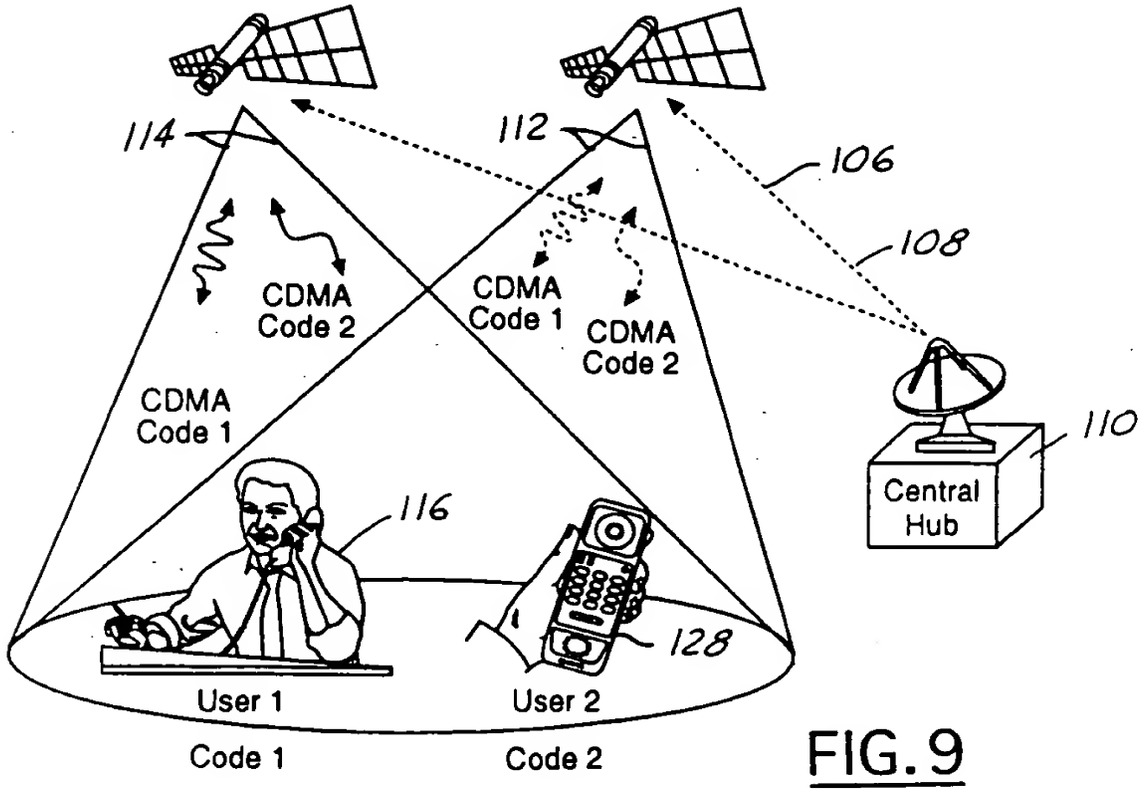


FIG.9

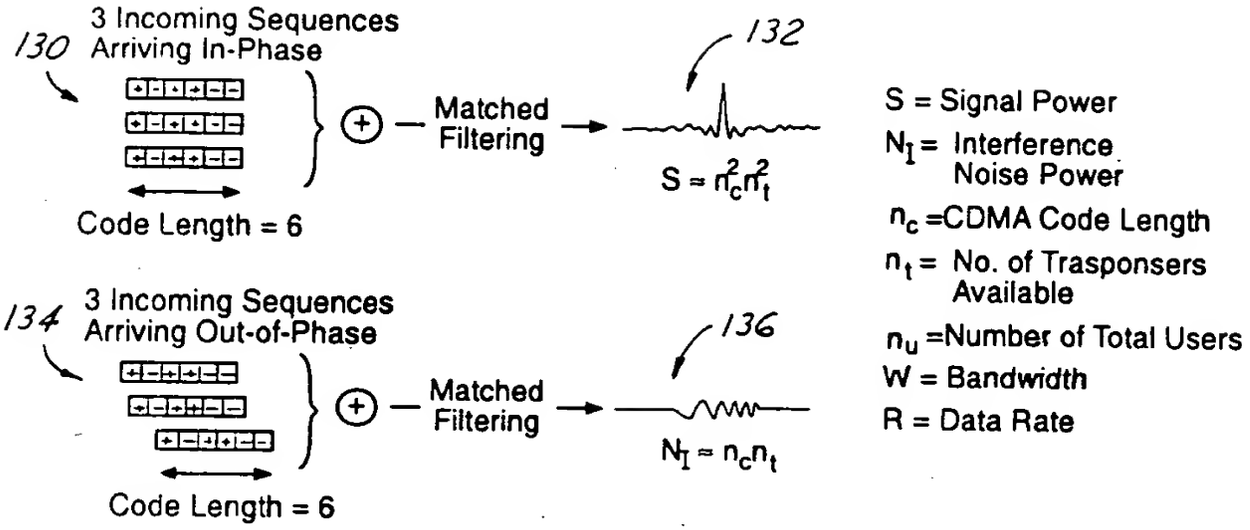


FIG. 10

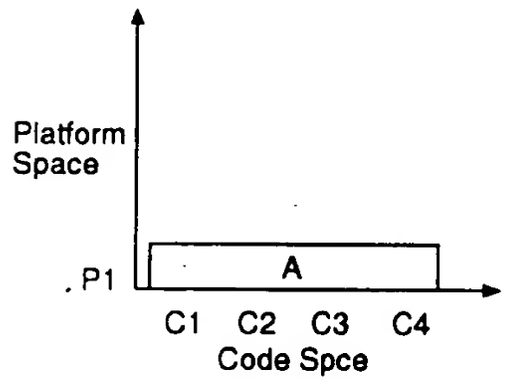


FIG. 11

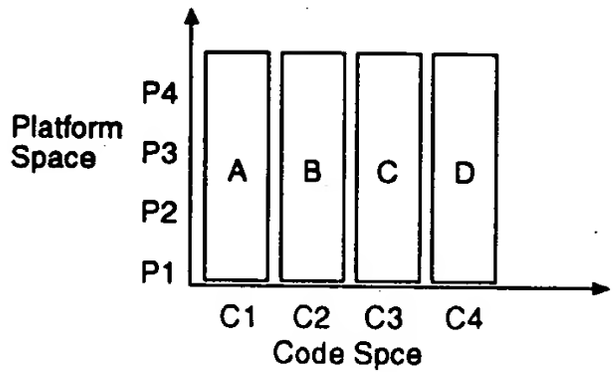


FIG. 12

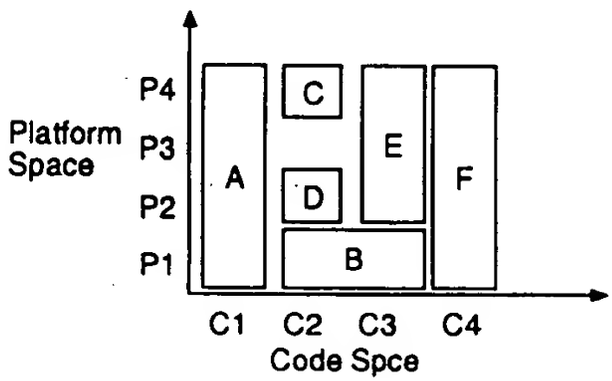


FIG. 13